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1894

PRESENT DAY TRACTS.

POINTS OF CONTACT BETWEEN REVELATION AND NATURAL SCIENCE

BY
SIR J. WILLIAM DAWSON, C.M.G.,
LL.D., F.R.S.

*President-Elect of the British Association for 1886;
Principal of M'Gill University, Montreal.*

AUTHOR OF
"Egypt and Syria, their Physical Features in relation
to Bible History," etc., etc.



56, PATERNOSTER ROW; 65, ST. PAUL'S CHURCHYARD;
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'*The Chain of Life in Geological Time;*' '*The Story of the Earth and Man;*'
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'*Fossil Men;*' etc., etc.



THE RELIGIOUS TRACT SOCIETY:
56, PATERNOSTER ROW: 65, ST. PAUL'S CHURCHYARD; AND
164, PICCADILLY.

6032 - April 13/21
Argument of the Tract.

There are many important points in which the history and doctrine of the Word of God come into close contact with the results of modern scientific investigation, or with theories and deductions based on these results; and it often happens, that, owing to want of acquaintance with one or other, well-meaning persons are led to believe that the word and the works of God are at variance with each other. It is the purpose of the present Tract to illustrate the harmony of the two records at their points of contact, and for this purpose the following topics have been selected :

(1) The General Nature of Creation; (2) The Origin and Early History of Man; (3) The Edenic State; (4) Body, Soul, and Spirit; (5) The Fall of Man; (6) The Antediluvians; (7) Primitive Social Institutions; (8) The Origin of Religion; (9) Natural Theology. It is shown that on all of these subjects there is an essential unity in the teaching of Natural Science and that of Revelation.

POINTS OF CONTACT BETWEEN REVELATION AND NATURAL SCIENCE.



THE trite saying that the Bible was not intended to teach science, is one of those superficial truths often used to cover much ignorance. It is no doubt true that in so far as science deals with the proximate causes of natural processes and classifies the objects of nature under general theoretical ideas, it has no connection with the Bible, since the latter refers all to the primary creative cause, and indulges in no theories and makes no formal classifications. On the other hand, no book, not directly relating to physical science, has more frequent reference to natural facts and laws, and commits itself more definitely to certain doctrines as to the origin of the world and things therein. Farther, in so far as science and philosophy deal with origins and historical order, they enter on a field which revelation has to some extent occupied, and this more

The Bible refers all to a primary creative cause.

Frequent reference to natural facts and laws in the Bible.

The Bible deals with origins and historical order.

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Unwarrantable use of scientific and philosophical hypotheses.

especially in connection with the origin and early history of man himself. It is also true that when some interpreters of the Bible have ventured to adopt certain scientific and philosophical hypotheses and to connect them with revelation, or when they have undertaken to combat these as opposed to the Word of God, they have often quite unwarrantably established alliances and antagonisms between interpretations more or less accurate of the two records of God in His Word and in His works. On the other hand, many speculations connected with science have been pressed into the service of Atheism and other forms of infidelity. It is the purpose of the present Tract to indicate some of the legitimate points of contact between science and revelation, more especially in relation to questions connected with the history of man as studied by the sciences of geology and archæology.

GENERAL NOTIONS OF CREATION.

The statement of the Bible with reference to creation.

WE may first examine the Biblical doctrine of creation in its relation to scientific fact and theory. The Bible opens with an explicit statement on this subject, which forms the basis of the whole of its subsequent teaching: "In the beginning God created the heavens and the earth." It offers no proof of this statement, but places it before us as an initial dogma, to be accepted by faith without

any direct evidence. Has science anything to say as to our acceptance or rejection of this primary dogma? It can offer no proof or disproof, but can merely inquire if the statement is one admitting of any rational alternative. It is, however, a complex statement, and may be divided into its constituent parts. First, as to a "beginning:"—Can Science regard the duration of the heavens and the earth as infinite? It cannot, for when we interrogate it as to the particular things known to constitute the earth and the heavens, it appears that we can trace all of them to beginnings at more or less definite points of past time. Then as to a producing cause:—If we cannot say that all things have existed from eternity, how did they begin? Science forbids us to say that it was by mere chance, for order and system cannot come of chance, nor has chance the power to initiate anything; and it would be the height of absurdity for investigators occupied solely with the study of causes and effects to admit that the universe is causeless. Nor will science allow us to say that things made themselves, or are their own causes. The only alternative is that they were made by some external power, and any power which could contrive and execute all the complex machinery of the heavens and the earth, or could initiate anything capable of developing such machinery, must be practically

Constituent
parts of the
statement.

A
beginning.

A producing
cause.

The only
alternative.

The
foundation
of a rational
and scientific
Theism laid
in the
Bible.

infinite, and must possess those attributes of superhuman power and superhuman wisdom which belong only to God. Thus the first sentence of the Bible lays the foundation of a rational and scientific Theism, by the statement of a proposition which we must accept, because we cannot rationally substitute anything for it.

If the Bible had opened with the statement, "The heavens and the earth had no beginning;" or, "In the beginning the heavens and the earth were self-created," or, "We cannot know by what power the heavens and the earth were created," the man of science, on reading these words, might indeed have closed the book, saying, it is useless to read any further. At a time when Agnosticism and Materialism claim that they are results of science, it is well for us to note that neither can supply any rational formula to replace this fundamental doctrine of revelation.

The Bible
statement
implies a
personal
creative
will as the
origin of all
things.

But the opening statement of the Bible implies a personal creative will as the origin of all things. Now it so happens that all our own actions and motions, the only things of whose ultimate cause we have any direct knowledge, proceed from this kind of force, this energy of energies, which we call will or volition. Whatever machinery we may discover in muscle or nerve or brain-cell, we come at last to the primary motive-power of will, and we can no more divest ourselves of the belief

of this than of that of our own existence and personality. So in nature, we can see no ultimate cause for anything except an Almighty creative will, and this implies a Person to whom it belongs. Thus the formula "God created" embraces all that science can in the last resort know of the origin of the universe. It is true that science can know this only by analogy, the analogy of the microcosm of man with the macrocosm of the universe, but beyond this analogy it has nothing to say. It is impossible, with reference to this ultimate result of the study of forces, to improve on the words of Sir William Grove, the author of the work which first opened up to the English-speaking world the great doctrine of the correlation of forces. After showing that neither matter nor force can be created or annihilated by us, and that an essential cause is unattainable by physical science, he concludes that "Causation is the will, creation the act, of God."

The formula "God created" embraces all that science can know, in the last resort, of the origin of the universe.

Sir William Grove's statement of the truth.

If we pass from the primary act of creation to consider its order and method, science and sound philosophy may still find themselves in harmony with revelation. The unity of nature as a single harmonious system, regulated in all its parts by definite laws, follows of necessity from our attributing it to the will of one almighty Author, and this grand monotheistic generalization not only dispels the mists and darkness of many

The unity of nature follows from attributing it to one almighty will.

The order of the creative work given in the Bible in harmony with the results of geological investigations.

The powers and agencies concerned in the introduction of animal life.

baneful superstitions, but opens the way for science to enter on the conquest of the material universe. In like manner, the order of that vision of the creative work with which the Bible begins its history, is so closely in harmony with the results worked out by geological investigations, that the correspondences have excited marked attention, and have been justly regarded as establishing the common authorship of nature and revelation. If again we look at the details of the narrative of creation, we shall be equally struck with the manner in which the Bible includes in a few simple words all the leading causes and conditions which science has been able to discover. For example, the production of the first animals is announced in the words, "God said let the waters swarm with swarmers."¹ A naturalist here recognises not only the origination of animal life in the waters, but also three powers or agencies concerned in its introduction, or rather perhaps one power and two conditions of its exercise. First, there are the Divine power and volition contained in the words "God said;" secondly, there is a medium, or environment previously prepared and essential to the production of the result—"the waters;" thirdly, there is the element of vital continuity in the term "swarmers,"—that reproductive element

¹ This is perhaps the best word to express the meaning of the word *Sheretzim*—rapidly multiplying creatures.

which hands down the organism with all its powers from generation to generation, from age to age. If we ask modern science what are the agencies and conditions implied in the introduction on the earth of the multitudinous forms of humble marine life which we find in the oldest rocks, its answer is in no essential respect different. It says that these creatures, endowed with powers of reproduction and possibly of variation, increased and multiplied and filled the waters with varied forms of life; in other words, they were "sheretzim," or swarmers. It further says that their oceanic environment supplied the external conditions of their introduction and continuance, and all the varieties of station suited to their various forms—"the waters brought them forth." Lastly, since biology cannot show any secondary cause adequate to produce out of dead matter even the humblest of these swarmers, it must here either confess its ignorance, and say that it knows nothing of such "abiogenesis,"¹ or must fall back on the old formula, "God said."

The account given by science in no respect different.

Let it be further observed that creation or making, as thus stated in the Bible, is not of the nature of what some are pleased to call an arbitrary intervention and miraculous interference with the course of nature. It leaves quite open the inquiry

Creation no arbitrary intervention and interference with the course of nature.

¹ It is sometimes urged against the idea of creation that it implies abiogenesis or production without previous life. But there must have been abiogenesis at some time, and probably more than once, else no living thing could have existed.

The creative
work part
of Divine
law.

how much of the vital phenomena which we perceive may be due to the absolute creative fiat, to the prepared environment, or to the reproductive power. The creative work is itself a part of Divine law, and this in a threefold aspect: First, the law of the Divine will or purpose; second, the laws impressed on the medium or environment; third, the laws of the organism itself, and of its continuous multiplication, either with or without modifications.

The varying
formulae
used in the
Bible may
imply vary-
ing modes
of intro-
ducing
different
living
beings.

While the Bible does not commit itself to any hypotheses of evolution, it does not exclude these up to a certain point. It even intimates in the varying formulæ "created," "made," "formed," caused to "bring forth," that different kinds of living beings may have been introduced in different ways, only one of which is entitled to be designated by the higher term "create." The scientific evolutionist may, for instance, ask whether different species, when introduced, may not under the influence of environment change in process of time, or by sudden transitions, into new forms not distinguishable by us from original products of creation. Such questions may never admit of any certain or final solution, but they resemble in their nature those of the chemist, when he asks how many of the kinds of matter are compounds produced by the union of simple substances, and how many are elementary and can be no further

decomposed. If the chemist has to recognize say sixty substances as elementary, these are to him manufactured articles, products of creation. If he should be able to reduce them to a much smaller number, even ultimately to only one kind of matter, he would not by such discovery be enabled to dispense with a Creator, but would only have penetrated a little more deeply into His methods of procedure. The biological question is no doubt much more intricate and difficult than the chemical, but is of the same general character. On the principles of Biblical theism it may be stated in this way: God has created all living beings according to their kinds or species, but with capacities for variation and change under the laws which He has enacted for them. Can we ascertain any of the methods of such creation or making, and can we know how many of the forms which we have been in the habit of naming as distinct species coincide with His creative species, and how many are really results of their variations under the laws of reproduction and heredity, and the influence of their surroundings?

The biological question stated on the principles of Biblical Theism.

There can be no doubt that these questions lie at present on the very borders of legitimate science, and that many of the answers which are given to them are rather subjective than based on objective reality.

The evidence of geology is altogether in favour of alternate periods of introduction of new forms

The evidence of geology in favour of alternate periods of introduction of new forms.

The divergent views of the several schools of evolutionists as yet mere speculations or inferences.

over great areas in vast numbers, and of periods characterised rather by extinction than renewal, and this in the case of both animals and plants.¹ If this were once distinctly understood, there would be less divergence between theistic evolution and the Biblical record of creation than that which now appears. It cannot however be too strongly insisted on, that the divergent views of the several schools of evolutionists are not definite results of scientific investigation, but to a large extent mere speculations or inferences from facts as yet imperfectly known, which will depend for their acceptance or rejection on discoveries yet to be made.

THE ORIGIN AND EARLY HISTORY OF Mⁿ 2

The term "pre-historic" relative.

WITH reference to the origin and early history of man, the points of contact between the Bible and science have become many and complicated, in consequence of the very important discoveries of the remains of men who lived before the dawn of any secular history. The term "prehistoric" as applied to such men is, of course, altogether relative. In America all is prehistoric before the first voyage of Columbus. In England, all before

¹ "The Chain of Life in Geological Time," "The Story of the Earth," Address by the author at Detroit Meeting of American Association.

² See for more full details on this subject, the Tract of this series on the *Age and Origin of Man*, by Pattison and Pfaff.

Julius Cæsar is prehistoric. In Egypt and the East we have written history that extends beyond the date of Abraham. In the Bible, history extends back to Paradise and to Adam. The prehistoric men of archæology and geology are, however, those known to us only by their remains found in caves and river gravels and similar depositories, and who, whatever their actual ages, have left no written records. The questions of how old they actually are, and how they can be connected with the Biblical history, are those that have established points of contact with revelation. Geology has divided the whole chronology of animal life on the earth into four great periods.¹ In the three first of these periods not only are remains of man absent, but we find no examples of those higher animals which are most nearly related to him in structure. In the geological as in the Biblical record, the lords of creation in those earlier periods were the "swarmers," and the great reptiles. It is, therefore, to the last of these periods, the Tertiary or Kainozoic, that we must look for human remains.

The Bible history of man and the prehistoric men of archæology and geology.

Four periods of animal life according to geology.

Human remains to be looked for in the last.

This, the last of the four great "times" of the earth's geological history, was ingeniously subdivided by Lyell, on the ground of percentages of marine shells and other invertebrates of the sea. According to this method, which, with some modi-

¹ Eozoic, Palæozoic, Mæozoic, and Kainozoic

Lyell's sub-
division of
the last of
the four
great
"times" of
the earth's
geological
history.

fications in details is still accepted, the *Eocene*, or dawn of the recent, includes those formations in which the percentage of modern species of marine animals does not exceed $3\frac{1}{2}$, all the other species found being extinct. The *Miocene* (less recent) includes formations in which the percentage of living species does not exceed 35, and the *Pliocene* (more recent) contains formations having more than 35 per cent. of recent species. To these three may be added the *Pleistocene*, in which the great majority of the species are recent, and the *Modern*, in which all may be said to be living. With respect to the higher creatures, the ordinary quadrupeds, such percentages do not apply. These animals begin to appear in the Eocene, but no recent species occur until we reach the later Tertiary or Pliocene. The Eocene thus includes formations in which there are remains of mammals or ordinary land quadrupeds, but none of these belong to recent species or genera, though they may be included in the same families and orders with the recent mammals. This is a most important fact, as we shall see, and the only exception to it is that Gaudry and others hold that a few living genera, as those of the dog, civet, and marten, are actually found in the later Eocene. The Miocene includes formations in which there are living genera of mammals, but no species which survive to the present time. The Pliocene and Pleistocene show living species, though in the

former these are very few and exceptional, while in the latter they become the majority.

With regard to the geological antiquity of man, no geologist expects to find any human remains in beds older than the Tertiary, because in the older periods the conditions of the world do not seem to have been suitable to man, and because in these periods no animals nearly akin to man are known. On entering into the Eocene Tertiary we fail in like manner to find any human remains; and we do not expect to find any, because no living species and scarcely any living genera of mammals are known in the Eocene; nor do we find in it remains of any of the creatures, as the anthropoid apes for instance, most nearly allied to man. In the Miocene the case is somewhat different. Here we have living genera at least, and we have large species of apes; but no relics of man have been discovered, if we except some splinters of flint found in beds of this age at Thenay in France, and a notched rib-bone. Supposing these objects to have been chipped or notched by animals, which is rendered very unlikely by the results of the most recent investigations, the question remains, was this done by man? The probability on general grounds of the existence of men at this period is so small, that Gaudry and Dawkins, two of the best authorities,¹ prefer to suppose that the artificer

The geological antiquity of man.

No human remains in the Eocene period.

¹ "Les Enchainements du Monde Animal;" "Early Man in Europe."

Miocene
man im-
probable.

was one of the anthropoid apes of the period. It is true that no apes are known to do such work now; but then other animals, as beavers and birds, are artificers, and some extinct animals possessed higher powers than their modern representatives. But if there were Miocene apes which chipped flints and cut bones, this would, either on the hypothesis of evolution or that of creation by law, render the occurrence of man still less likely than if there were no such apes. For these reasons neither Dawkins nor Gaudry, nor indeed any geologists of authority in the Tertiary fauna, believe in Miocene man.

Human
remains
supposed to
have been
found in
Pliocene
beds have
probably
come there
by some
slip of the
ground.

In the Pliocene, as Dawkins points out, though the facies of the mammalian fauna of Europe becomes more modern, and a few modern species occur, the climate becomes colder, and in consequence the apes disappear, so that the chances of finding fossil men are lessened rather than increased, in so far as the temperate regions are concerned. In Italy, however, Capellini, has described a skull, an implement, and a notched bone, supposed to have come from Pliocene beds, and which are preserved in the Museum of Florence. They are all, however, of so recent types that it is in every way likely they have become mixed with the Pliocene stuff by some slip of the ground. As the writer has elsewhere pointed out¹

¹*Fossil Men*, 1886.

similar and apparently fatal objections apply to the skull and implements alleged to have been found in Pliocene gravels in California. Dawkins further informs us that in the Italian Pliocene beds supposed to hold remains of man, of twenty-one mammalia whose bones occur, all are extinct species except possibly one, a hippopotamus. This of course renders very unlikely in a geological point of view the occurrence of human remains in these beds, and up to this time no such discovery has been certainly established.

In the Pleistocene deposits of Europe—and this applies also to America—we for the first time find a predominance of recent species of land animals. Here, therefore, we may look with some hope for remains of man and his works, and here, accordingly, in the later Pleistocene or early Modern, they are actually found. When we speak, however, of Pleistocene man, there arise questions as to the classification of the deposits, which it seems to the writer that some of the leading geologists have not answered in accordance with geological facts, and a misunderstanding as to which may lead to serious error.

The Pleistocene deposits of Europe.

The geological formations of the Pleistocene period are, for the most part, superficial gravels and clays, and deposits in caverns, and it is somewhat difficult, in many cases, to ascertain their relative ages. We are aided in this, however, by certain

Geological formation of the Pleistocene period.

The
continental
period of
the Pleisto-
cene.

The glacial
period.

Second con-
tinental
period.

Chrono-
logical
table.

ascertained facts as to elevations and submergences of the land, and as to climatal conditions in the northern hemisphere. There was at the beginning of the Pleistocene what has been called a continental period, when the land of the northern hemisphere was more extensive than now, and there seems to have been a mild climate. This was succeeded by a period of cold, the so-called glacial period, in which the land became diminished in extent by submergence, and the climate became so severe that snow and ice prevailed over nearly all the temperate regions of Europe, Asia, and North America. After this there was a second continental period of mild climate, succeeded by another submergence of limited duration, and then the continents acquired the forms which they still retain. These chronological points, important in reference to the correlation of geology and the Bible, are represented in the following table:—

The Pleistocene and Modern in the Northern Hemisphere with reference to the Introduction of Man.

(In descending order from newer to older.)

Modern, or Period of Man and Modern Mammals:—

Recent Age.—Continents at or nearly at their present levels.—

Existing races of men and living species of mammals in Europe.

Post-glacial or Second Continental Age.—Land more extensive than now. Climate temperate. Man represented in Europe and Western Asia by races now extinct, and contemporary with the mammoth and other great mammals also extinct,

but also with modern species. This was terminated by a submergence fatal to men and many mammalia, and covering the land with gravel and silt.

Pleistocene, or Period of extinct and a few recent Mammals :—

Later Pleistocene, or Glacial Age.—Cold climate and great submergence of land in northern hemisphere.

Early Pleistocene or *First Continental Age*.—Land very extensive, and inhabited by many mammals now extinct. Climate temperate.

It will be observed, with reference to the above table, that the earliest certain indications of man belong to the modern period alone, and that this modern or human period is divided into two portions by a great submergence, in which certain races of men and many mammals perished, and after which the geographical conditions of the northern hemisphere were considerably modified. I have not used the terms historic and pre-historic in the above table, because, while in most countries the period of written history covers only a locally variable part of the recent age, in other countries it extends back into the post-glacial, which thus becomes the antediluvian period. I have, however, elsewhere proposed the name *Palæocosmic* for the men of the post-glacial age, and *Neocosmic* for the men of the recent ages, and shall use these terms rather than *Palæolithic* and *Neolithic*, since these last refer to forms of implements which, though locally of great antiquity, exist in some places up to the present day. The men of

Earliest
indications
of man.

the post-glacial age have also been called men of the gravels and caves, and the men of the mammoth and reindeer ages, and they resemble in physical features the modern Turanian races of Northern Europe, Asia, and America. We might, with reference to the Bible history, call them antediluvian men, but the evidence of this will appear in the sequel. In the meantime we may observe that the testimony of the earth coincides with that of the Bible, in representing man as the latest member of the animal kingdom, the last-born of animals.

The testimony of the earth and the testimony of the Bible coincide in representing man as the last-born of the animals.

The most important point with reference to any parallelism between the geological history of man as tabulated above, and the Biblical record, is to ascertain what absolute value in time can be assigned to the several ages known as post-glacial and recent, or, in other words, how long ago it is since the glacial period terminated. So vague are the data for any calculation of this kind, that the estimates of the date of the glacial period have ranged from hundreds of thousands of years down to a very few thousands. The tendency of recent investigations has been to discard the higher estimates and to bring the close of the glacial age constantly nearer to the present time. The absence of any change in invertebrate life, the small amount of erosion that has occurred since the glacial age, and many

The tendency of recent investigations to bring the close of the glacial age nearer to our own time.

other considerations, have been tending in this direction. I may refer to only one criterion, the importance and availability of which were long ago recognised by Sir Charles Lyell. This is the recession of the Falls of Niagara, from the shores of Lake Ontario to their present position. This recession is effected by the cutting back of beds of limestone and shale; and the resulting gorge, about seven miles in length, cuts through the deposits of the glacial period, proving, what on other grounds would be obvious, that the cutting began immediately after the glacial age. When Lyell estimated the time required, the rate of recession of the Fall was supposed to be one foot per annum. It is found, however, by the results of actual surveys¹ to be three feet annually. Lyell's estimate of the time required was thirty thousand years. The new measurements reduced this to one third, and further abatements are required by the possibly easier cutting of the first part of the gorge, by the fact that a portion of it of uncertain amount above the "whirlpool," had been cut at an earlier period and needed only to be cleared out, and by the probability that, in the early post-glacial period there was more water in the Niagara river than at present. We thus have physical proof that the close of the glacial submergence and re-elevation of the American land

The recession of the Falls of Niagara.

Lyell's estimate of the time required.

The new measurements.

The close of the glacial submergence and re-elevation of American land.

¹ Report of the Geodetic Surveys of the State of New York.

The ordinarily received chronology of the post-diluvian period all that geology can allow for the existence of man in the temperate regions of the northern hemisphere.

The accordance between science and Bible history with regard to the antiquity and early history of man.

could not have occurred more than about eight thousand years ago. It follows that the ordinarily received chronology of about four or five thousand years for the post-diluvian period, and two thousand or a little more for the antediluvian period, will exhaust all the time that geology can allow for the possible existence of man, at least in the temperate regions of the northern hemisphere. Facts recently ascertained with reference to the delta of the Nile,¹ lead to similar conclusions for the oldest seats of human civilisation. Whatever demands may be made by philologists, historians, or antiquaries, or by the necessities of theories of evolution, must now be kept within the limits of facts such as those above referred to, and which are furnished to us by physical geography and geology. These facts must also lead to considerable revision of the excessive uniformitarianism of one school of English geologists, and to explanations more reasonable than some which have been current as to the deposition and age of superficial gravels and similar deposits. When all these points have been adjusted, it will be found that there is a sufficiently precise accordance between science and Bible history with regard to the antiquity and early history of man.

¹ "Egypt and Syria," in *Bypaths of Bible Knowledge*.

THE EDENIC STATE OF MAN.

PERHAPS no portion of Bible history seems to have been more thoroughly set at naught by modern scientific speculations than the golden age of Eden, so dear to the imagination of the poet, so interwoven with the past condition and future prospects of man, as held by all religions. It can easily be shown, however, that there are important points of agreement between the simple story of Eden, as we have it in Genesis, and scientific probabilities as to the origin of man. Let us glance at these probabilities.

The Bible story of Eden and scientific probabilities as to the origin of man.

We have already seen that man is a recent animal in our world. Now, under any hypothesis as to his origin, the external conditions must have been suitable to him before he could appear. If, to use the terms of evolutionary philosophy, he was a product of the environment acting on the nature of a lower animal, this would be all the more necessary. Further, it would be altogether improbable that these favourable conditions should prevail at one time over the whole world. They must, in the nature of things, have prevailed only in some particular region, the special "centre of creation" of man; and this, whether its conditions arose by chance, as certain theorists would have

Favourable conditions for man's appearance necessary.

Science not
inconsistent
with
Scripture
statement.

us believe, or were divinely ordained, must have been to the first men the Eden where they could subsist safely when few, and whence they could extend themselves as they increased in numbers. There is, therefore, in science nothing inconsistent with the Scripture statement that God "prepared a place for man."

The account
in Genesis
in accordance
with the require-
ments of
the case.

Further, no one supposes that man appeared at first with weapons, armour, and arts full-blown. He must have commenced his career naked, destitute of weapons and clothing, and with only such capacities for obtaining food as his hands and feet could give him. For such a being it was absolutely necessary that the region of his *début* should furnish him with suitable food, and should not task his resources as to shelter from cold or as to defence from wild animals. The statements in Genesis that it was a "garden," that is, a locality separated in some way from the uninhabited wilderness around; that it was stocked with trees pleasant to the sight and good for food; and that man was placed therein naked and destitute of all the arts of life, to subsist on the spontaneous fruits of the earth, are thus perfectly in accordance with the requirements of the case.

If we inquire as to the portion of the world in which man at first appeared, the theory of evolution advises us to look to those regions of the world in which the lowest types of men now exist

or recently existed, as Tasmania, Tierra del Fuego, and the Cape of Good Hope, or it assures us that those tropical jungles which now afford congenial haunts for anthropoid apes, but are most unsuitable for the higher races of men, are the regions most likely to have witnessed the origin of man. But this is manifestly absurd, since, in the case of any species, we should expect that it would originate where the conditions are most favourable to the existence of that species, and not in those regions where, as shown by the result, it can scarcely exist when introduced. We should look for the centre whence men have spread, to those regions in which they can most easily live, and in which they have most multiplied and prospered. In historical times these indications, and also those of tradition, archæology, and affiliation of languages and races, point to Western Asia as the cradle of man. Even Haeckel in his *History of Creation*, though it is convenient, in connection with his theoretical views, to assume for the origin of man a continent of "Lemuria" now submerged under the Indian Ocean, traces all his lines of affiliation back to the vicinity of the Persian Gulf, in the neighbourhood of the districts to which the Bible history restricts the site of Eden. Wallace has shown that considerations of physical geography render it in the highest degree improbable that any such continent in the Indian Ocean ever existed, so that Haeckel's

The suggestions of the theory of evolution as the locality of man's appearance absurd.

All indications point to Western Asia as the cradle of man.

map of the affiliation of man actually accords with the statements of the Pentateuch, except in an extension of the lines of descent southward which science refuses to grant to him.

Changes
connected
with the
fall of man.

Again, there is reason to believe that, at the fall of man, climatic, or other changes, expressed by the "cursing of the ground," occurred, and that in the Edenic system of things very large portions of the earth were to be or become suitable to the happy residence of man. Geology makes us familiar with the fact that such changes have occurred in the latter half of the Tertiary period, to such an extent that at one time the plants of warm temperate regions could flourish in Spitzbergen, and at another ice and snow covered the land far into temperate latitudes. Further, it would seem that the oldest men known to us by archæological discoveries, and who are probably equivalent to the later Antediluvians, lived at a time of somewhat rough and rigorous climate,—a time when the earth was cursed with cold and with physical vicissitudes, and which probably succeeded a more favourable period in which man appeared.

No necessity
for giving
up the story
of Eden.

Thus it would seem that we are not under any scientific necessity to give up the old and beautiful story of Eden, and that on the contrary, this better accords with the probabilities as to the origin of man than do those hypotheses of his derivation which have been avowedly founded on scientific considerations.

BODY, SOUL, AND SPIRIT.

IN Genesis man has the dignity of being represented as a special creation, and this arises, not from anything in his merely bodily or physical constitution, but from that higher spiritual and rational nature said to have been conferred on him by the special inbreathing or inspiration of God. It is this which makes him the "shadow and likeness" of God, and fits him for being the lord of the earth. It would be easy to show that this spirit as distinguished from mere animal life or soul, the "inspiration of the Almighty" as Job calls it, is constantly referred to in the Hebrew Scriptures, but it has its most clear development in the New Testament. Every thoughtful reader of the Gospels and the Epistles in the original must have noticed the peculiar use of the words "flesh," "soul or life," and "spirit,"¹ and of the adjectives derived from them, and must have perceived that these terms are used in constant and definite senses, though there are of course some exceptional and figurative employments of them, and cases where one of the terms implies another not mentioned.² He may have regarded this classification as expressing definite ideas of the writers as to a three-fold constitution

Man a special creation.

New Testament terms relating to the constitution of man.

The formula "Body, soul, and spirit."

¹ Σάρξ, ψυχή, πνεῦμα.

² We have also, "Body (σῶμα), soul, and spirit," 1 Thess. v. 23.

Points of
contact
between
modern
science and
the Biblical
view of
man.

of human nature, as merely arbitrary and accidental, or as conforming to a classification current at the time. In either of these cases he may have felt some interest in comparing it with the arrangements of modern psychology. Yet in such comparison he will have found little satisfaction, unless he turns to that reaction of physiology upon mental science which is so influential in our day ; but here, if I mistake not, he will find some curious points of contact between modern science and the Biblical view of humanity. In making this comparison, we must refer, for the Biblical distinction of body, soul, and spirit, and for the conditions under which an eternal life is affirmed to be possible for all three, to the New Testament itself, and to the numerous theological writers who have discussed the subject.

The in-
fluence of
physiologi-
cal facts on
our views.

Hitherto it has been somewhat difficult to bring this Biblical psychology, if it may be so called, into harmony with the mental science of the schools. But any one who has read Calderwood's recent work, *The Relations of Mind and Brain*,¹ must be aware that physiological facts relating to the organism, the "flesh" of the New Testament, are beginning very seriously to modify our views. We now know that the grey cellular matter of the brain constitutes a reservoir of sensory and motor energy, which supplies the power necessary to

The grey
cellular
matter of
the brain
a reservoir
of sensory
and motor
energy.

¹ London, 1879.

place us in relation with things without, and to impress, by means of muscular effort, our own power on the outer world. Further, there seems the best reason to believe that the mass of the brain is directly connected with sensation and motion, though there seem to be means of regulation and co-operation of sensations and actions in connection with the front and back portions of the cerebral hemispheres. There are facts indicating that the anterior portions of the hemispheres are the organs of a certain determining and combining property of the nature of animal intelligence, and that the posterior portions, in association with the sympathetic nerve, are connected with the affections and passions.¹ Now all this belongs, in the first instance, to living nerve matter, and is possessed by man in common with animals. They, like us, can perform reflex or automatic actions, altogether or partially involuntary. They, like us, can perceive and reflect, and have affections, passions, and appetites. Even in animals this supposes something beyond the mere organism, and which can combine and compare sensations and actions. This is the animal or psychical life, which, whatever its essential nature, is something above and

The mass of the brain connected with sensation and motion.

All this belongs to man in common with animals.

¹ It is a very old and in some respects well-founded notion that the viscera are connected with the affections. We now know something of the relation of these to the sympathetic nerve system, and to the posterior portion of the cerebral lobes. Ferrier, Calderwood, and very recently Bucke, have discussed these points.

Man has
other and
higher
powers.

beyond mere nerve-power, though connected with it and acting by means of it. But in man there are other and higher powers, determining his conscious personality, his formation of general principles, his rational and moral volitions and self-restraints. These are manifestations of a higher spiritual nature, which constitutes in man the "image and shadow of God."

Thus the physiologist may fairly claim, not for protoplasm as such, but for the living organism, all the merely reflex actions, as well as the appetites and desires, and much that belongs to perception and ordinary intelligence. These may be regarded as bodily and psychical in the narrow sense. But the higher regulating powers belong to a spiritual domain into which he cannot enter.

Tyndall's
admission.

Huxley.

Spencer.

It is interesting to observe here that even those who seem most desirous to limit the powers of man to mere properties of the living organism are prevented by their own consciousness, as well as by scientific facts, from fully committing themselves to this. Tyndall admits the existence of a "chasm" "intellectually impassable" between physical facts and human consciousness. Huxley's human automaton is a "conscious automaton," and in some sense "endowed with free will," and he declines to admit that he will ever be proved to be only "the cunningest of nature's clocks." Spencer and writers of his school have made similar ad-

missions. There are, it is true, extreme writers like Buchner, with whom matter is the origin and essence of all that exists, but their strong assertions of this, being destitute of proof, can scarcely be held to be scientific.

Extreme position of Buchner.

At present no doubt this whole subject is as a department of science somewhat crude and rudimentary, and it becomes us to speak with some reserve respecting it, but the drift of opinion is in the direction above indicated. It has become evident that the more recent discoveries as to the functions of brain will not warrant the extreme views of materialists, while on the other hand they serve to correct the doctrines of those who have run into the opposite extreme of attaching no importance to the fleshly organism and its endowment of animal life. In like manner, these discoveries are tending to establish definite boundaries between the domain of mere automatism and that of rational will. In so far as these results are attained, we are drawn more closely to that middle ground occupied by the New Testament writers, and which, without requiring us to commit ourselves to any new hypotheses or technical distinctions, gives a fair valuation to all the parts of the composite nature of man. The practical value of this Bible philosophy is well known. It relegates to their proper place the merely somatic and psychical elements of our nature, admits their

Recent discoveries as to the functions of the brain will not warrant the extreme views of materialists.

They tend to define the boundaries between mere automatism and rational will.

The practical value of the Bible philosophy.

What
Bible philo-
sophy aims
at.

The prospect
it holds
forth.

value in that place, and condemns them only when they usurp the position of the higher determining powers. It seeks to place these last in their true relation to our fellow-men and to God, and to provide for their regulation under God's law and the guidance of His Spirit, with the object of securing a true and perfect equilibrium of all the parts of our nature. It is thus enabled to hold forth a prospect of eternal life, peace, and happiness to body, soul, and spirit, and to point out the meaning and the value of the conflicts which rage within the man in our present imperfect state. This practical object, in connection with the mission of the Saviour, is what the New Testament has in view ; but in arriving at this, it has undoubtedly pointed to the solutions of the mysteries of our nature at which science and philosophy are beginning to arrive by their own paths ; just as, in another department, the Bible has shadowed forth the great principles and process of creation in advance of the discoveries of geology.

THE FALL OF MAN.

THE fall of man presents itself as a serious question in the study of nature, as well as in theology. When we consider man as an improver and innovator in the world, there is much

that suggests a contrariety between him and nature, and that instead of being the pupil of his environment he becomes its tyrant. In this aspect man, and especially civilized man, appears as the enemy of wild nature, so that in those districts which he has most fully subdued, many animals and plants have been exterminated, and nearly the whole surface has come under his processes of culture, and has lost the characteristics which belonged to it in its primitive state. Nay more, we find that by certain kinds of so-called culture, man tends to exhaust and impoverish the soil, so that it ceases to minister to his comfortable support, and becomes a desert. Vast regions of the earth are in this impoverished condition, and the westward march of exhaustion warns us that the time may come when, even in comparatively new countries like America, the land will cease to be able to sustain its inhabitants. We know also from geology that the present state of the physical world is not the best possible for man; and that its climatic conditions, in the middle Tertiary for example, have been much better than at present.

Contrariety
between
man and
nature.

What
geology
teaches of
the present
state of the
physical
world.

Here there rises before us a spectre which science and philosophy often appear afraid to face, and which asks the dread question, What is the cause of the apparently abnormal character of the relations of man and nature? In attempting to solve this question, we must admit that the position of

The cause
of the
abnormal
relations of
man and
nature.

Freedom of
will an
element of
instability.

Man has
actually
fallen.

man even here is not without natural analogies. The stronger preys upon the weaker, the lower form gives place to the higher, and in the progress of geological time old species have died out in favour of newer, and old forms of life have been exterminated by later successors. Man, as the newest and highest of all, has thus the natural right to subdue and rule the world. Yet there can be little doubt that he uses this right unwisely and cruelly, and these terms themselves explain why he does so, because they imply freedom of will. Given a system of nature destitute of any being higher than the instinctive animal, and introduce into it a free rational agent, and you have at once an element of instability. So long as his free thought and purpose continue in accord with the arrangements of his environment, so long all will be harmonious; but the very hypothesis of freedom implies that he can act otherwise, and so perfect is the equilibrium of existing things, that one wrong or unwise action may unsettle the nice balance, and set in operation trains of causes and effects producing continued and ever-increasing disturbance. This "fall of man" we know as a matter of observation and experience has actually occurred, and its only natural remedy would be to cast man back again into the circle of merely instinctive action, or to carry him forward, until by growth in wisdom and knowledge he should again

be fitted to be the lord of creation. The first method has been proved unsuccessful by the rebound of humanity against all the attempts to curb and suppress its liberty. The second has been the effort of all reformers and philanthropists since the world began; but its imperfect success affords a strong ground for clinging to the Theistic view of nature, for soliciting the intervention of a Power higher than man, and for hoping for a final restitution of all things through the intervention of that Power. Mere materialistic evolution must ever and necessarily fail to account not only for the higher nature of man, as well as his disharmony with other parts of nature, and for his moral aberrations. These only come rationally into the system of nature under the supposition of a higher Intelligence, from whom man emanates, and whose nature he shares.

The intervention of a higher power to remedy the fall needed.

But on this Theistic view we are introduced to a kind of unity and of evolution for a future age, which is the great topic of revelation, and is not unknown to science and philosophy, in connection with the law of progress and development deducible from the geological history, in which an ascending series of lower animals culminates in man himself. Why should there not be a new and higher plane of existence to be attained to by humanity—a new geological period, so to speak, in which present anomalies shall be corrected, and the grand unity

What the theistic view introduces us to.

St. Paul's
anticipation.

of the universe and its harmony with its Maker fully restored? This is what Paul anticipates when he tells of a "pneumatical" or spiritual body to succeed to the present natural or "psychical" one, or what Jesus Himself tells us when He says that in the future state we shall be like to the angels.

Angels
conceivable.

Angels are not known to us as objects of scientific observation, but such an order of beings is quite conceivable, and this not as supernatural, but as part of the order of nature. They are created beings like ourselves, subject to the laws of the

Their con-
stitution and
powers.

universe, yet free and intelligent and liable to error, in bodily constitution freed from many of the limitations imposed on us, mentally having higher range and grasp, and consequently masters of natural powers not under our control. In short, we have here pictured to us an order of beings forming a part of nature, yet in their powers as miraculous to us as we might be supposed to be to lower animals, could they think of such things.

Part of
nature.

They bridge
over the
gulf between
humanity
and Deity.

This idea of angels bridges over the otherwise impassable gulf between humanity and deity, and illustrates a higher plane than that of man in his present state, but attainable in the future. Dim perceptions of this would seem to constitute the substratum of the ideas of the so-called polytheistic religions. Christianity itself is in this aspect not so much a revelation of the supernatural as the highest bond of the great unity of nature. It

Christianity
the highest
bond of the
unity of
nature.

reveals to us the perfect Man, who is also one with God, and the mission of this divine man to restore the harmonies of God and humanity, and consequently also of man with his natural environment in this world, and with his spiritual environment in the higher world of the future. If it is true that nature now groans because of man's depravity, and that man himself shares in the evils of this disharmony with nature around him, it is clear that if man could be restored to his true place in nature he would be restored to happiness and to harmony with God; and if, on the other hand, he can be restored to harmony with God, he will then be restored also to harmony with his natural environment, and so to life, and happiness, and immortality. It is here that the old story of Eden, and the teaching of Christ, and the prophecy of the New Jerusalem strike the same note which all material nature gives forth, when we interrogate it respecting its relations to man. The profound manner in which these truths appear in the teaching of Christ has perhaps not been appreciated as it should, because we have not sought in that teaching the philosophy of nature which it contains. When He points to the common weeds of the fields, and asks us to consider the garments more gorgeous than those of kings in which God has clothed them, and when He says of these same wild flowers, so daintily made by the supreme Artificer, that to-day

What it
reveals to
us.

The restor-
ation of
man and
its effects.

The philo-
sophy of
nature in
Christ's
teaching not
sufficiently
appreciated.

they are, and to-morrow are cast into the oven, He gives us not merely a lesson of faith, but a deep insight into that want of unison which, centering in humanity, reaches all the way from the wild flower to the God who made it, and requires for its rectification nothing less than the breathing of that Divine Spirit which first evoked order and life out of primæval chaos. When He points out to us the growth of these flowers without any labour of their own, He in like manner opens up one of the most profound analogies between the growth of the humblest living thing and that of the new spiritual nature which may be planted in man by that same Divine Spirit.

ANTEDILUVIANS.

The
Noachian
deluge
a fact of
ancient
Assyrian
history.

THE deluge of Noah has ceased to be a matter solely theological or dependent on the veracity of Genesis. It has now become a fact of ancient Assyrian history, a tradition preserved by many and various races, a pluvial or diluvial age, or time of subsidence, intervening between the oldest race of men known to geology and modern times. We are at least entitled, conjecturally, to identify these things, and through means of these identifications to arrive at some definite conceptions of the condition and character of the earliest men, whether we call them the Antediluvians of the Bible, or the Palæocosmic or Palæolithic men of geology.

The Book of Genesis traces man back to Eden, the characteristics of which we have already considered, and which is placed by that old record, as by the Assyrian genesis, in the Euphratean valley, whether in its upper table-lands or in its delta. From this Eden man was expelled, the old Aryan traditions say by physical deterioration—the incoming, perhaps, of a later glacial age. The Semitic traditions, on the other hand, refer it to a moral fall and a judicial visitation of God. In any case it was a very real evil, involving a change from that condition of happy abundance and freedom from physical toil, which all histories and hypotheses as to human origin must assign to the earliest state of our species, to a condition of privation, exposure, labour, struggle for existence against the uncongenial environment of a wilderness world. Such new conditions of existence must have tended to try the capabilities and endowments of men. Under certain circumstances, and when not too severe, they must have developed energy, inventiveness, and sagacity, and thus may have produced a physical and mental improvement. Under other circumstances they must have had a deteriorating influence, degrading the physical powers and reducing the mental nature almost to a bestial condition. The experience of our modern world, and even of civilized communities, enables us too well to comprehend these opposite effects.

Expulsion
from Eden.

Aryan
traditions.

Semitic
traditions.

Effects of
the new
conditions
of existence.

In any case, such struggle was, on the whole, better for man when in an imperfect state. Only a creature perfectly simple and harmless morally, could enjoy with advantage the privileges of an Eden.

Division of
the human
family into
two tribes.

The Bible story, however, gives us a glimpse of still another and unexpected vicissitude. The human family at a very early period split into two tribes. One of these, the Sethidæ, simple, God-fearing, conservative, shepherds and soil-tillers; the other, the Cainidæ, active, energetic, godless, city-builders and inventors. Among the Cainidæ sprang up another division into citizen peoples, dwelling in dense communities, practising metallurgy and other arts, inventing musical instruments, and otherwise advancing in material civilisation; and wandering Jabalites—nomads with movable tents, migrating widely over the earth, and perhaps locally descending to the rudest forms of the hunter's life. Thus from the centre of Eden and the fall sprang three diverse lines of human development.

Division of
the Cainidæ.

But a time came when these lines reacted on each other. The artisans and inventors intermarried with the simple country folk. The nomadic tribes threw themselves in invading swarms on the settled communities. Mixed races arose, and wars, conquests, and disturbances, tending to limit more and more the areas of peace and

Intermar-
riages

of plenty, and to make more and more difficult the lives of those who sought to adhere to the old Edenic simplicity ; until this was well-nigh rooted out, and the earth was filled with violence. In the midst of this grew up a mixed race of men, strong physically, with fierce passions, daring, adventurous, and cruel, who lorded it over the earth, and deprived others of their natural rights and liberties—the giants and men of renown of antediluvian times, the “Nephilim” of the Bible, the demigods and heroes of many ancient idolatries.

The rise of
a mixed
race of men.

Their cha-
racteristics
and exploits.

Such, according to the Bible, was the condition of the later antediluvians, and in this was the reason why they were swept away with a flood. Before this catastrophe, we can gather from the story, there must have been great progress in the arts. Intellects of gigantic power, acting through the course of exceedingly long lives, had gained great mastery over nature, and had turned this to practical uses. There must have been antediluvian metallurgists as skilled as any of those in early post-diluvian times ; engineers and architects capable of building cities, pyramids, and palaces, and artisans who could have built triremes equal to those of the Carthaginians. At the same time there must have been wild outlying tribes, fierce and barbarous. Farther, the state of society must have been such that there was great pressure for the

Progress.

State of
society.

Change of
climate in
later ante-
diluvian
days.

means of subsistence in the more densely peopled districts; and as agricultural labour was probably principally manual, and little aided by machines or animals, and as the primitive fertility of the soil must, over large regions, have been much exhausted, we can understand that lament of Lamech as to the hardness of subsistence with which he precedes his hopeful prophecy of better times in the days of Noah.¹ Certain geological facts also give us reason to suspect that in the later part of the antediluvian period, the climate of the northern hemisphere was undergoing a gradual refrigeration.²

The godless
and materialistic
character of
the time.

Another feature of the antediluvian time was its godless and materialistic character. This is quaintly represented in some of the American legends of the deluge, by the idea that the antediluvian men were incapable of thanking the gods for the benefits they received. They had, in short, lost the beliefs in a ruling divinity and a promised Saviour, and had thrown themselves wholly into a materialistic struggle for existence, and this was the reason why they were morally and spiritually hopeless and had to be destroyed. We do not hear of any idolatry or superstition in antediluvian times, nor of the lower vices of the more corrupt

¹ Gen. v. 29.

² This was certainly the case if the later Antediluvian age is the same with that of men of the "Rein-deer age" in Europe.

and degraded races. The vices of the antediluvians were those of a superior race, self-reliant, ambitious, and selfish. Devoting themselves wholly to secular aims and to the promotion of the arts of life, and utilizing to the utmost the bounties of nature, their motto was "let us eat and drink," not for to-morrow we die, but because we shall live long in our enjoyments. The inevitable result in the tyranny of the strong over the weak, and the rebellion of the weak against the strong, in the accumulation of wealth and luxury in favoured spots, and in the desolation of those spots by the violence and rapacity of rude and warlike tribes, came upon them to the full, but brought no repentance. Such a race, to whom God and the spiritual world had become unthinkable, to whom nothing but the material goods of life had any reality, who probably scoffed at the simple beliefs of their ancestors as the dreams of a rude age, had become morally irredeemable, and there was nothing in store for it but a physical destruction.

The vices
of the antediluvians.

The race
had become
morally
irredeem-
able.

The cataclysm by which these men were swept away may have been one of those submersions of our continents which, locally or generally, have occurred over and over again, almost countless times, in the geological history of the earth, and which, though often slow and gradual, must in other cases have been rapid, perhaps much more so than

the hundred and twenty years which the Bible record allows us to assign to the whole period of the Noachic catastrophe.¹

The ancient cave-men seem to resemble the ruder antediluvians.

It is an interesting fact that those ancient cave-men, whose bones testify to the existence of man in Europe before the last physical changes of the post-glacial age, and while many mammals now locally or wholly extinct still lived in Europe, present characters such as we might expect to find at least in the ruder nomadic tribes of the antediluvian men. Their large brains, great stature, and strong bones point to just such characters as would befit the giants that were in those days. It is farther of interest that though no relics of civilized antediluvians have yet been discovered, the early appearance of skill in the arts of life in the valleys of the Euphrates and Nile in post-diluvian times, points to an inheritance of antediluvian arts by the early Hamitic or Turanian nations, and is scarcely explicable on any other hypothesis.

Indications of an inheritance of antediluvian arts in Hamitic and Turanian nations.

The question of a possible relapse of the world into the antediluvian condition.

It is a question, raised by certain expressions of Scripture, whether the world will again fall into the condition in which it was before the flood. "As it was in the days of Noah," we are told, so shall it be when the Son of Man comes to judgment. To bring the world into such a state it would require that it should shake off all the superstitions, fears, and religious hopes which now affect

¹ Gen vi. 3, and 1 Pet. iii. 20.

it; that it should practically cast aside all belief in God, in morality, and in the spiritual nature and higher destiny of man; that it should devote itself wholly to the things that belong to the present life, and in the pursuit of these should be influenced by nothing higher than a selfish expediency. Then would the earth again be filled with violence, and again would it cry unto God for punishment, and again would He say, that "His Spirit should no longer strive with men," and that it "repented Him that He had made man upon the earth."

I have said that such a catastrophe as the deluge of Noah, is in no respect incomprehensible as a geological phenomenon, and were we bound to explain it by natural causes, these would not be hard to find. The terms of the narrative in Genesis well accord with a movement of the earth's crust, bringing the waters of the ocean over the land, and at the same time producing great atmospheric disturbances. Such movements seem to have occurred at the close of the post-glacial or Palæocosmic age, and were probably connected with the extinction of the Palæocosmic, or cave-men of Europe, and of the larger land animals, their contemporaries; and these movements closed the later continental period of Lyell, and left the European land permanently at a lower level than formerly. Movements of this kind have been supposed by geologists to be very slow and gradual; but there

The deluge
compre-
hensible as
a geo-
logical
pheno-
menon.

The narrative in Genesis does not imply a sudden catastrophe.

It purports to be the narrative of an eye-witness.

This view obviates the question of the universality of the catastrophe.

is no certain evidence of this, since such movements of the land as have occurred in historical times, have sometimes been rapid ; and there are many geological reasons tending to prove that this was the case with that which closed the post-glacial age. It is to be observed, also, that the narrative in Genesis does not appear to imply a very sudden catastrophe. There is nothing to prevent us from supposing that the submergence of the land was proceeding during all the period of Noah's preaching, which we are told was 120 years, and the actual time during which the deluge affected the district occupied by the narrator was more than a year. It is also to be observed, that the narrative in Genesis purports to be that of an eye-witness. He notes the going into the ark, the closing of its door, the first floating of the large ship ; then its drifting, then the disappearance of visible land, and the minimum depth of fifteen cubits, probably representing the draft of water of the ark. Then we have the abating of the waters, with an intermittent action, going and returning, the grounding of the ark, the gradual appearance of the surrounding hills, the disappearance of the water, and finally the drying of the ground. All this, if historical in any degree, must consist of the notes of an eye-witness ; and if understood in this sense, the narrative can raise no question as to the absolute universality of the catastrophe, since the whole

earth of the narrator was simply his visible horizon. This will also remove much of the discussion as to the animals taken into the ark, since these must have been limited to the fauna of the district of the narrator, and even within this the lists actually given in Genesis exclude the larger carnivorous animals. Thus, there would be nothing to prevent our supposing, on the one hand, that some species of animals became altogether extinct, and that the whole faunæ of vast regions not reached by the deluge remained intact. It is further curious that the narrative of the deluge preserved in the Assyrian tablets, like that of Genesis, purports to be the testimony of a witness, and indeed of the Assyrian equivalent of Noah himself. The "waters of Noah" are thus coming more and more within the cognizance of geology and archæology, and it is more than probable that other points of contact than those we have noticed may ere long develop themselves.

The narrative on the Assyrian tablets also purports to be the testimony of an eye-witness.

In connection with all this, a most important consideration is that above referred to, in the possible equivalency with the historical deluge of the great subsidence which closed the residence of palæocosmic men in Europe, as well as that of several of the large mammalia. Lenormant and others have shown that the wide and ancient acceptance of the tradition of the deluge among all the great branches of the human family necessi-

Lenormant's conclusion from the tradition of the deluge among all the great branches of the human family.

The effect of correlation of the deluge and the break in the geological history of man on views held as to the antiquity of man.

tates the belief that, independently of the Biblical history, this great event must be accepted as an historical fact which very deeply impressed itself upon the minds of all the early nations. Now, if the deluge is to be accepted as historical, and if a similar break interrupts the geological history of man, separating extinct races from those which still survive, why may we not correlate the two? The misuse of the deluge in the early history of geology, in employing it to account for changes that took place long before the advent of man, certainly should not cause us to neglect its legitimate uses, when these arise in the progress of investigation. It is evident that if this correlation be accepted as probable, it must modify many views now held as to the antiquity of man. In that case, the modern gravels spread over plateaus and in river valleys, far above the reach of the present floods, may be accounted for, not by the ordinary action of the existing streams, but by the abnormal action of currents of water diluvial in their character. Further, since the historical deluge cannot have been of very long duration, the physical changes separating the deposits containing the remains of palæocosmic men from those of later date would in like manner be accounted for, not by slow processes of subsidence, elevation, and erosion, but by causes of more abrupt and cataclysmic character.

PRIMITIVE SOCIAL INSTITUTIONS.

CERTAIN archæologists have recently been much occupied with attempts to trace the social condition of primitive man in the customs of the ruder and more barbaric tribes, and in turn to deduce these from a supposed bestial condition in which the family and the marriage tie did not exist. Now, it is well known, that in countries so widely separated as North America, India, Australia, and New Guinea, we find certain peculiar and often complex laws of affinity and of marriage, which are probably of very ancient origin. These are such as the following:—The recognition of woman as the principal factor in the family; descent in the female line, and systems of consanguinity based on this; exogamy or prohibition to marry within the same tribe or family; family totems or emblems devised to regulate these arrangements, and in connection with all this, a system of tribal communion in which the wives and mothers are a related communism, into which the husbands are introduced from without by the practice of exogamy.

Attempts to trace the history of primitive man.

Ancient laws of affinity and marriage.

That this complicated system sprang from a primitive promiscuous intercourse is a pure assumption, and contrary to scientific probability. The long period of helplessness and dependence of the human child renders it essential that the relation of husband and wife should have existed from the

The relation of husband and wife must have existed from the beginning.

The need of
guarding
the family
relation.

The design
of the law
of exogamy

Man the
represent-
ative of God
in the lower
world.

first, or to place the matter on the lowest level, that man should be a permanently pairing animal, and the analogy of some of the animals nearest to man, though the nearest of these are very remote from him in this respect, strengthens this conclusion. Again, so soon as men formed tribes and communities, which necessity would oblige them to do almost from the first, it would become necessary to guard the family relation, and this was done by enforcing the rights of the wife and mother to her husband and her child, and to care and protection in child-bearing and nursing. Lastly, the law of exogamy could scarcely have been spontaneous, but must have been an expedient devised by sagacious leaders in order to prevent, on the one hand, too close inter-marriage, and, on the other, entire isolation on the part of the tribes into which men were necessarily divided, and at the same time to avert undue variation and degradation. In the record of the social arrangements of primitive man as given in the Bible, we have intimations of these institutions, and confirmations of their existence in subsequent references, even after the patriarchal and tribal arrangements had been fully established.

Man was made in the "shadow and likeness of God," his representative in this lower world; but what of woman? "Male and female created He them;" and man in this double capacity was to

replenish the earth and subdue it, not its slave and worshipper, but its master—"treading it under his foot" as the words literally are. Man and woman were to do this, so that the woman as well as the man shares in the divine likeness; and it is in the family relation and in this alone, that such manifestation of God and the consequent subduing of the world can take place. Let us notice also that remarkable lesson taught to the man, when after submitting to him those animals nearest in rank, no help meet for him is found, and the woman is brought to him as his true help-meet, "bone of his bone and flesh of his flesh." This leads to the primitive law of marriage, which has until recently received less attention from historians and theologians than it merits; and not long ago, a late eminent archæologist was surprised when I pointed out to him that his discoveries of exogamy and descent in the female line had been anticipated in the law—"therefore shall a man leave his father and his mother, and shall cleave unto his wife." Here it is the husband who leaves his family to go with his wife, and she, as the centre of the family and mother of the children, is the true husband, the bond of the household. It is true, that after the fall and as a punitive visitation on the woman, it is decreed that her husband shall "rule over her;" but this, like other disabilities arising from the fall, may have been regarded in

Woman
shares the
divine
likeness.

The
primitive
law of
marriage.

The effect
of the fall.

Traces of the primitive practice in the patriarchal institutions.

The patriarchal system and matriarchy.

early times as an evil to be removed if possible. Even under the patriarchal system, subsequently dominant, we find indications of the primitive practice in the belief of Sarah and Rebecea, that their sons, if they married in Canaan, must go into the tribe of their wives; and the prevalence of this law among many ancient nations, and especially among those of Turanian origin, has been well ascertained. Among American Indians, and Australian aborigines, it still lingers in customs which, however degraded, are nevertheless from the point of view of Genesis, reminiscences of unfallen men. I may pause here to note that the supposed antagonism between the patriarchal system, and what has been called "matriarchy" has no real existence, and this also is evident from the Scripture history. The social and family relations were founded on the rights of the woman; but the leader and counsellor of the tribe, the chief, especially in times of danger, is the oldest or most influential man. This distinction between civil and social laws has existed from the earliest times, and among very rude peoples, and it is singular that it should be overlooked as it has been in some recent discussions. Besides, as Dr. Tyler has remarked, when a maternal community has been broken up, and when one of its families has been for any reason separated from the others, it is natural that authority should fall into the

hands of the father. In other words, primitively the father takes the lead in a journey or expedition; in the village community the women rule; in the tribe or clan there is a patriarchal chief.

The best scientific as well as Biblical illustration of the primitive nature of marriage is afforded by the reference to it made by Jesus Christ himself in connection with the law of divorce. The Pharisees, most self-satisfied men, wise in their own wisdom and case-hardened in their own orthodoxy, as the most earnest bigots of our own day, and the Sadducees, as shallow, sceptical, and contemptuous as the most advanced of our modern Agnostics, agreed in sanctioning the loose notions of their time as to the sacredness of marriage. It is the Pharisees, however, who put the question, "May a man put away his wife for every cause?"¹ saying in effect, "Is woman the slave of man? May she be put away for any caprice, treated with any injustice, without offence to God?" Our Lord scornfully takes them back to the Book of Genesis and its simple child-like story. "Have ye not read," He asks, "that He who made them male and female" enacted for them the law of marriage, and that this law was "the man shall cleave unto his wife, and the twain shall become one flesh." That is God's order. Is there any place in it for putting away? Nay, if there were such, would it

The
reference of
Christ to
the law of
divorce.

¹ Matthew xix. 4.

not rather be the woman that could put away her husband, than the husband his wife?

The apostles' doctrine.

But, objected the Pharisees, Moses authorised divorce, and the Christian may also object and may plead the apostolic doctrine as to the subjection of woman,¹ but Christ has His answer to both. It is "because of the hardness of your hearts, but from the beginning it was not so." The original equality of man and woman was, like so much other good, broken down by the fall, which brought among other woes the subjection of woman, too often developed into tyranny and injustice to her.

Woman in a fallen world.

In a hard fallen world of labour, struggle, warfare, and danger, woman necessarily becomes the weaker vessel, and her original dignity of child-bearer, which gave her in Eden her high position, and which even after the fall is sought to be retained in her prophetic position as the potential mother of a Saviour, becomes in savage and rude states of society an additional cause of weakness and disability. Hence one of the great missions of Christianity is to restore woman to that place which she had in the beginning, to the Edenic position of being the equal help-meet of man. The Christian system, adapting this to the condition of an imperfect but improving world, holds before us the

The restoration of woman,

¹ Eph. v. 22; 1 Peter iii. 1, and other passages in the New Testament, where however the fall of man is referred to as the reason of this subjection.

Christian daughter, sister, wife and mother, as the most beautiful of moral pictures, the pillars of God's family. But this ideal will not be realised till He whose first title is that of "Seed of the woman" shall have bruised the serpent's head, and shall have restored the paradise of God.

The realisation of the ideal.

Before leaving this part of the subject it is well to contrast the grand and ennobling doctrine of the Bible, extending with perfect consistency all the way from the first notice of the relation of the sexes in Genesis to the personal teaching of Jesus, not only with the corruptions of His day, but with those base and degrading speculations of our time which can find in their godless philosophy no better foundation for the family and the rights of woman than the contests of beasts for the possession of their females. Perhaps none of the paths of Agnostic speculation is more repulsive than this to all the higher instincts of humanity, and certainly none is more instructive with reference to the abyss into which we are invited to fling ourselves. Let it be observed also that if we depart at all from the old Biblical idea of man created in the shadow and likeness of God, and thus endowed with a spiritual as well as an animal nature, there is no logical stopping-place, & sort of a moral gulf lower than that which any savage tribe has yet reached. In this respect our inquiries into the state of barbarous people

The doctrine of the Bible and current speculation on the subject.

striving to sustain themselves above mere anarchy and bestial relations by clinging to their old traditional laws and social customs, and in their darkness feeling after God if haply they may find Him, show us that their spiritual condition, low though it is, may be more hopeful than that to which the philosophical Agnostic has already reduced himself.

THE ORIGIN OF RELIGION.

The Duke of Argyll's view.

Given a spiritual nature religion becomes a necessity of existence.

Much modern discussion assumes that man is destitute of a higher nature.

THE Duke of Argyll, in his work on the Unity of Nature, has well remarked that questions as to the origin of religion have some resemblance to the question, What is the origin of hunger and thirst? Given an organism wanting nourishment, and hunger and thirst seem to follow as matters of course. So in the case of religion: given a spiritual nature craving communion with its God, believing in its own indestructibility, having ideas of right and wrong, of duty and responsibility, some form of religion becomes a necessary condition of existence. The peculiarity of much modern writing as to the origin of religion is that the writers leave out of sight the spiritual nature of the man and the existence of a God revealing Himself to His rational offspring, and then proceed to ask how can a man destitute of any higher nature than that of the animal, and without any

God, or incapable of knowing anything of Him, come to be a religious being? It is as if one were to imagine an animal destitute of any power of digestion, and of any need of food, and then to ask, How can it come to experience hunger and thirst? Conducted in this way, the inquiry as to the origin of religion must necessarily be nugatory.

On the other hand, if we are content to accept the nature of man as we find it in experience, and as it is represented to us in the Scriptures, we have a solution at once of the phenomenon that man is and always has been influenced by religion, just as he has been affected with hunger and thirst.

The attempts that have been made to classify religions, have also much in them that is misleading. If, for example, we attempt to distinguish between natural and revealed religion, we shall find that no religion is wholly natural or wholly revealed. In all there lie at the bottom those instincts of natural conscience and belief in immortality which seem to be inborn in man. In all there is some room left for the reason as the judge of truth and right. On the other hand, if we believe the Hebrew Scriptures to embody a revelation from God, we must also believe that portions of the same revelation exist in all religions, however corrupt. The religion of Adam and of Noah, as stated in the Old Testament, was not that of the Hebrews merely, but of right, that of all

Misleading
classification
of religions.

The religion
of Adam
and Noah,
etc.

mankind. Up to the time, in short, of the special legislation of Moses, the religion of the Hebrews was not theirs alone, but the common property of mankind; and we must expect to find traces at least of such truths as the unity of God, the creation, the immortality of man, the fall, the promise of a Saviour, the deluge and its moral lessons, in all religions. Practically we do find this to be the case, and nothing can be more interesting than to trace in the varied idolatrous and corrupt religions the golden thread of Divine truth which penetrates them, however hidden and obscured by foreign accretions. Viewed in this way, the whole mythology of the world becomes intelligible, and is illuminated by the Bible light. Without this guidance, it ceases to afford any definite results even to scientific investigation.

A thread of divine truth penetrates the various idolatrous and corrupt religions.

Max Müller's classification.

Max Müller, in his *Science of Religion*, rejecting the division into natural and revealed, proposes to arrange religions according to the great divisions of the human race, as Turanian, Aryan and Semitic. This classification is, however, equally useless without the light cast on the subject by the Bible. If we call, for example, the Jewish religion Semitic, nothing can be more certain than that it was a quite exceptional Semitic religion during the greater part of its existence, differing from the religions of cognate races in Western Asia, as much as from the religions of other Gentile peoples. On

The Jewish an exceptional Semitic religion.

the other hand, if Turanians and Aryans as well as Semites were sons of Noah, they must at first have possessed the same religion, and must merely have developed this in different directions, which we can easily see was the fact, when we study the resemblances and differences of the religions of antiquity. If we ask what caused the religion of the Hebrews to differ, its own history informs us that this sprang first from the pronounced dissent of Abraham from the religion of other Semites, and his falling back on the simplicity of primitive Monotheism; secondly, and as a consequence of the former, from the purity and definiteness given by the legislation of Moses. That these men actually lived and influenced the religion of their own and later times we cannot doubt, because such doubt would throw all subsequent history into confusion. If they were acting under the influence of the Spirit of God,—as we believe them to have been,—then their religion is a product of inspiration, and therefore a revelation. If not then they stand merely on the level of successful reformers, though here again may arise the question whether any successful reformer or elevator of humanity is destitute of some special divine impulse. In any case it is clear that the theory of religion, if we may so express it, embodied in the Bible is consistent with itself, and with the history and present condition of religious

The cause of the difference of the Hebrew religion from other Semite religions.

The Bible theory of religion consistent with itself and with the history and present condition of religion.

beliefs, and that without taking this Biblical theory into consideration, it will be hopeless to attempt to explain the origin and history of religion, or to classify religions with any certainty.

NATURAL THEOLOGY.

J. S. Mill's
admission.

THERE are certain schools of modern science and philosophy which affect contempt for the doctrine of final causes and for the teaching of the Bible with reference to the manifestation of God in His works. On the other hand, we find Mill, in one of his last essays, after rejecting every other argument for the existence of a God, admitting that the argument from design in the universe is irresistible, and that nature does testify of its Maker. There can be no question that in this Mill is right, if for no other reason than that old and well-known one that mere blind chance cannot be conceived of as capable of producing an orderly system of things. Farther, there can be no question that the one argument for a God which is convincing to Mill is also the one, and the only one, which the Holy Scriptures condescend to refer to. They habitually take the existence of God for granted, as something not needing to be proven to reasonable minds, but they reason from nature, with reference to His attributes and modes of procedure, as, for instance, in that

remarkable passage of the Apostle Paul where he affirms that to the heathen the "power and divinity" of God are apparent from the things which He has made. But perhaps there is no part of the Bible in which the teaching of nature with reference to divine things is more fully presented than in the Book of Job, and not a few even of religious men fail to see the precise significance of the address of the Almighty to Job, in the concluding chapters of that book.

The teaching of nature in the book of Job.

Job is tortured and brought near to death by severe bodily disease. His friends have exhausted all their divinity and philosophy upon him, in the vain effort to convince him that he deserves this infliction for his special and aggravated sins. At length the Almighty intervenes and gives the final decision. But instead of discussing the ethical and theological difficulties of the case, He enters into a sublime and poetical description of nature. He speaks of the heaven above, of the atmosphere, its vapours and its storms, and of the habits and powers of animals. In short, Job is treated to a lecture on natural history. Yet this instantaneously effects what the arguments of the friends have altogether failed to induce, and Job humbles himself before God in contrition and repentance. His words are very remarkable (Job xlii. 1-12) :

Job and his friends.

God's interference

"I know that Thou canst do all things,
From Thee no purpose is withheld ;

Job's confession.

(Thou hast said) 'Who is this that obscures counsel without knowledge?'¹

(And I confess that) I have uttered what I understood not,
Things too hard for me which I know not,
But hear me now and I will speak.

(Thou hast said) 'I will demand of thee
And inform thou Me.'²

I have heard of Thee with the hearing of the ear,
And now mine eye seeth Thee;
Therefore do I abhor myself,
And repent in dust and ashes."

The effect
of God's in-
terference.

What does this import? Simply that, through the presentation to him of God's works, Job had attained a new view of God and of himself. He had not considered or fairly weighed the world around him in its grandeur, its complexity, its unaccountable relations, and contrasted it with his own little sphere of thought and work. Had he done so, he would, like Paul in later times, have said, "Hath not the potter power over the clay?" God, if really the architect of nature, must have thoughts and plans altogether beyond our comprehension. He must be absolute sovereign of all. It is our part to submit with patience to His dealing with us, to lean upon Him by faith, and thus to carry this almighty power with us. When brought to this state of mind, Job can be vindicated against his friends who have taken upon them to explain God's plans and have misrepresented them, as many good men like them are constantly doing; against Satan, the evil angel, who with all his

¹ Chap. xxxviii. 2.

² Chap. xxxviii. 3; xl. 7.

intelligence and acuteness cannot comprehend Job's piety, but believes it to be mere self-interest, and who now sees himself foiled and Job brought into still greater prosperity; while by the result and the explanation of it handed down to our time, there is a permanent gain in favour of the solution of the great moral difficulties of humanity.

I would put this case of Job before modern Christians in three aspects. (1) Do we attach enough of importance to the Gospel in nature, as vindicating God's sovereignty and fatherhood, and preaching submission, humility, and faith? Might we not here take a lesson from the Bible itself? (2) May there not be many in our own time who, like Job, have "heard of God with the hearing of the ear," but have not seen Him with the eye in His works? and, on the other hand, are there not many who have seen the works without seeing the Maker, who can even "magnify God's works which men behold," without knowing the Author of them? Would it not be well sometimes to bring together in friendly discussion those who thus look on only one side of the shield? (3) Should we not beware of the error of Job's friends in misrepresenting God's plans, and thereby misleading those whom we try to guide. These wise and well-meaning men had nature all around them, and had observed it with some care and minuteness, yet they disregarded its teachings, and

Three
aspects of
Job's case.

The teaching given in the book of Job needed even by many cultured minds in our time.

dwelt on old laws and philosophic dogmas, till God Himself had to bring out the whirlwind and the thunder storm, the ostrich, the horse, and the hippopotamus to teach a better theology. The Book of Job belongs to a very ancient time, when men possessed little of divine revelation, perhaps none at all in a definite and dogmatic form, yet there are in our time many even of cultured minds as ignorant of God's ways as were Job's friends. To them the same elementary teaching may afford the training which they need.

The object of this Tract.

The scope of this Tract has necessarily been somewhat discursive, since its object has been to glance at a variety of things new and old, relating to the Works and the Word of God. And thus to encourage the study of the Bible as a storehouse of Divine wisdom for practical guidance, as a light shining in a dark world, and enabling us to see our relations to God and our fellow-men; above all, as the revelation of Jesus Christ, the great Enlightener and Healer, given of God that "whosoever believeth on Him may not perish, but have everlasting life!"

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